

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1 – 10 (canceled)

11. (Currently Amended) An electromagnetic ultrasonic probe for coupling-media-free generation and reception of ultrasonic waves in the form of linearly polarized transverse waves in a workpiece, ~~respectively and from a~~ the workpiece, ~~includes~~ comprising:

a unit ~~which generates for generating~~ the ultrasonic waves inside the workpiece, ~~and which is provided with the unit comprising~~ a transmission coil arrangement, to which a high-frequency voltage can be applied to generate a high-frequency magnetic field, and a premagnetizing unit ~~to generate for generating~~ a quasi-static magnetic field ~~superimposing~~ superimposed on the high-frequency magnetic field in the workpiece; and

an ultrasonic waves reception unit ~~providing~~ comprising a reception coil arrangement ~~which can be connected to an evaluation unit;~~ with

the transmission coil arrangement and the reception coil arrangement being ~~disposed torus-shaped~~ and being disposed at least on one partially toroidally ~~designed~~ toroidal-shaped magnetic core, ~~which is provided with~~ having two front ends which can be turned to face the workpiece and ~~via~~ through which the high-frequency

magnetic fields can be coupled into, respectively and coupled out of, the workpiece;
and wherein

a contact area for providing direct or indirect contact between the
premagnetizing unit ~~can be contacted directly or indirectly with~~ and the workpiece via
~~a~~ through the contact area; and

the at least one partially ~~toroidally designed~~ toroidal-shaped magnetic core is
disposed laterally next to the contact area of the premagnetizing unit in such a
manner so that the premagnetizing unit can project over the partially ~~toroidally~~
~~designed~~ toroidal-shaped magnetic core perpendicular to the contact area.

12. (Currently Amended) The electromagnetic ultrasonic probe according to
claim 11, wherein the premagnetizing unit generates a quasi-static magnetic field
~~whose~~ with magnetic field lines passing through the contact area largely
perpendicular thereto.

13. (Currently Amended) The electromagnetic ultrasonic probe according to
claim 11, wherein the premagnetizing unit ~~provides~~ includes at least one permanent
magnets ~~whose~~ with magnetic field lines ~~can be~~ which are concentrated by means of
a concentrator on the contact area.

14. (Currently Amended) The electromagnetic ultrasonic probe according to claim 13, wherein the at least one permanent magnet is at least partly enclosed by a magnetic workpiece which ~~bundles~~ couples the magnetic field lines ~~on to~~ the concentrator.

15. (Currently Amended) The electromagnetic ultrasonic probe according to claim 13, wherein the concentrator ~~is made of~~ comprises a magnetic material and is ~~provided with~~ has two surfaces opposite each other, of which one is surface being larger than the other surface and the ~~smaller surface~~ which is smaller ~~determines the~~ determining a size of the contact area and the larger surface is being connected to the magnetic workpiece.

16. (Currently Amended) The electromagnetic ultrasonic probe according to claim 14, wherein the concentrator ~~is made of~~ comprises a soft magnetic material and ~~is provided with~~ has two surfaces opposite each other, of which one is surface being larger than the other surface and the ~~smaller surface~~ which is smaller ~~determines~~ determining the size of the contact area and the larger surface is being connected to the soft magnetic workpiece.

17. (Currently Amended) The electromagnetic ultrasonic probe according to claim 15, wherein the concentrator ~~is provided with~~ comprises an electrically nonconducting material in which ferromagnetic particles are embedded in a

~~matrix-like~~, or the concentrator comprises a ~~stack-like arrangement~~ of single metal plates.

18. (Currently Amended) The electromagnetic ultrasonic probe according to claim 16, wherein the concentrator is ~~provided with~~ comprises an electrically nonconducting material in which ferromagnetic particles are embedded in a ~~matrix-like~~, or the concentrator comprises a ~~stack-like arrangement~~ of single metal plates.

19. (Currently Amended) The electromagnetic ultrasonic probe according to claim 11, wherein the at least one partially ~~toroidally~~ toroidal-shaped ~~designed~~ magnetic core has a partially toroidal plane ~~which forms~~ forming with the contact area an angle α with $0^\circ < \alpha < 90^\circ$, and the front ends of the partially toroidally ~~designed magnetic core form an~~ the angle α with the partially toroidal plane.

20. (Currently Amended) The electromagnetic ultrasonic probe according to claim 11, ~~wherein~~ comprising at least two partially ~~toroidally~~ designed toroidal-shaped magnetic cores ~~are provided, of which one provides~~ core comprising the transmission coil arrangement and the other core comprising the reception coil arrangement, and the partially ~~toroidally~~ designed toroidal-shaped magnetic cores are disposed on opposite sides relative to the premagnetizing unit ~~on opposite sides~~.

21. (Currently Amended) The electromagnetic ultrasonic probe according to claim 20, wherein the partially ~~toroidally designed~~ toroidal-shaped magnetic cores are disposed axially symmetrically to a ~~symmetrical~~ axis passing through the premagnetizing unit, and wherein the partially toroidal planes of the partially ~~toroidally designed~~ toroidal-shaped magnetic cores each form an angle α with the contact area.

22. (Currently Amended) The electromagnetic ultrasonic probe according to claim 11, wherein the at least one partially ~~toroidally designed~~ toroidal-shaped magnetic core is ~~designed as~~ comprises a toroidal tape core.

23. (Currently Amended) The electromagnetic ultrasonic probe according to claim 13, wherein the premagnetizing unit ~~provides~~ comprises two permanent magnets.

24. (Currently Amended) The ~~elecetromagnetic~~ electromagnetic ultrasonic probe according to claim 19, wherein $30^\circ < \alpha < 60^\circ$.